Claims

[c1] 1.A radio frequency identification label comprising
A tag circuit capable of producing an electromagnetic signal containing information
An antenna element for coupling the tag circuit to an external tag reader device
A substrate material layer
A defined "marker" region on the substrate that is electrically coupled to the tag circuit through direct ohmic contact or close capacitive coupling
A tag circuit arranged such that all or part of its transmitted information is dependent on the electronic properties of the marker region, as defined by its electrical conductivity, dielectric permittivity, and magnetic permeability.

[c2] 2. The radio frequency label of Claim 1, wherein the tag circuit is a digital electronic integrated circuit

[c3] 3. The radio frequency label of Claim 1, wherein the tag circuit is a circuit is comprised of polymer-based transistors and passive components

[c4] 4. The radio frequency label of Claim 1, wherein the tag circuit is a circuit is comprised of chipless material structures, such as a one or more resonant circuits.

[c5] 5. The radio frequency label of Claim 1, wherein the substrate layer is comprised of woven cloth or threads

[c6] 6. The radio frequency label of Claim 1, wherein the marker region is comprised of woven cloth or threads

[c7] 7. The radio frequency label of Claim 2, wherein the label is inductively-coupled to the tag reader

[c8] 8. The radio frequency label of Claim 2, wherein the label is capacitively-coupled to the tag reader

[c9] 9. The radio frequency label of Claim 3, wherein the label is inductively-coupled to the tag reader

[c10] 10. The radio frequency label of Claim 3, wherein the label is capacitively-coupled to the tag reader

[c11] 11. The radio frequency label of Claim 7, wherein the marker region is also electrically

coupled to the object onto which the label is affixed.

[c12] 12. The radio frequency label of Claim 8, wherein the marker region is also electrically coupled to the object onto which the label is affixed.

[c13] 13. The radio frequency label of Claim 9, wherein the marker region is also electrically coupled to the object onto which the label is affixed.

[c14] 14. The radio frequency label of Claim 10, wherein the marker region is also electrically coupled to the object onto which the label is affixed.

[c15] 15. The radio frequency label of Claim 4, wherein the marker region is also electrically coupled to the object onto which the label is affixed.

[c16] 16. The radio frequency label of Claim 7, wherein the marker region is comprised of a printed pattern of electrically conductive ink.

[c17] 17. The radio frequency label of Claim 8, wherein the marker region is comprised of a printed pattern of electrically conductive ink

[c18] 18. The radio frequency label of Claim 9, wherein the marker region is comprised of a printed pattern of electrically conductive ink

[c19] 19. The radio frequency label of Claim 10, wherein the marker region is comprised of a printed pattern of electrically conductive ink

[c20] 20. The radio frequency label of Claim 2, wherein the information generated by the tag circuit is encrypted by a function that is dependent on the electronic properties of the marker region